

REMARKS

Claims 1-9 and 14-40 are pending in the application. Claims 1, 9, 15, 22, and 31 are independent. Claims 1-8, 15, 22 and 25 stand rejected under 35 U.S.C. §102(c) as anticipated by Hauck.

Claim 1 has been amended to make it more clear that the invention implements multiple different tunneling protocols. As described in the instant specification, tunneling is a process whereby a data packet is encapsulated in another packet before traversing a network. There are two main reasons for tunneling. One is to transport one type of packet over a network designed for another type of packet, e.g. Ethernet over ATM. Another application for tunneling is to create a Virtual Private Network, a process whereby a secure connection is created across a public network through the use of tunneling.

Currently there are a wide variety of tunneling protocols. Among the most popular protocols are: IP over IP, IP over MPLS, Ethernet over MPLS, and L2TP. Each of these tunneling protocols requires different processing of packets. See pages 1-9 of the instant specification which explains how each tunneling protocol is presently implemented. The present invention provides a uniform method for implementing all of these different protocols in a single switch or router.

Hauck describes a system and method for network tunneling utilizing micro-flow state information. A micro-flow is a uniquely identifiable data stream. In Hauck, all of

the micro-flows are IP data streams. Each micro-flow may utilize a different IP protocol such as TCP, UDP, FTP, etc. According to Hauck, micro-flows are aggregated into a flow block and flow blocks are assigned to tunnels. All of the tunnels in Hauck are MPLS tunnels. Hauck does not teach how to implement any tunneling protocol. Hauck is concerned with managing micro-flows.

In sum, Hauck discloses IP data arriving at a router, aggregating flow blocks and sending micro-flows through an MPLS tunnel to another router where they are extracted. **Only one tunneling protocol is used in Hauck.** Hauck's primary concern is to implement QoS (quality of service) through the use of micro-flows and aggregate flow blocks. Implementing different tunneling protocols is not an issue in Hauck.

Claims 2-8 depend from claim 1 and the remarks made above regarding claim 1 apply to these claims as well. In view of the foregoing, it is submitted that claim 1 and its dependents are allowable over Hauck.

Independent claim 15 has been amended in a manner similar to the amendment to claim 1. It is believed that amended claim 15 clearly sets forth a method for implementing different tunneling protocols in a uniform manner with structural support in the body of the claim for the function recited in the preamble. As explained in detail above, Hauck describes multiple tunnels but does not describe or suggest how to implement different tunneling protocols and does not describe or suggest implementing

multiple tunneling protocols in a uniform manner. Care must be taken not to confuse the phrase “multiple tunnels” with the phrase “multiple tunneling protocols”.

In view of the foregoing, it is submitted that claim 15 and its dependents are allowable over Hauck.

Independent claim 22 has been amended in a manner similar to the amendments made to claims 1 and 15. It is believed that amended claim 22 clearly sets forth a method for implementing different tunneling protocols in a uniform manner with structural support in the body of the claim for the function recited in the preamble. As explained in detail above, Hauck describes multiple tunnels but not describe or suggest implementing different tunneling protocols and does not describe or suggest implementing multiple tunneling protocols in a uniform manner.

In view of the foregoing, it is submitted that claim 22 and its dependents are allowable over Hauck.

Claims 31, 32, and 36 stand rejected under 35 U.S.C. §102(e) as anticipated by Shrader.

Independent claim 31 is directed to an application programming interface (API) which includes a tunneling interface data structure which is configurable to implement any one of a plurality of *different tunneling protocols*. Schrader shows a graphical

interface for managing IP tunnels between two firewalls. All of the tunnels use the same tunneling protocol, i.e. IP over IP. The individual tunnels can be configured, e.g. to filter packets coming from a certain IP address, to employ encryption, etc., but the tunneling protocol can not be changed.

In view of the foregoing, it is submitted that claim 31 and its dependents are allowable over Shrader.

Claims 9 and 35 stand rejected under 35 U.S.C. § 103(a) as obvious over Shrader in view of Hauck.

Independent claim 9 is a method for implementing multiple tunneling protocols which includes the step of associating an input interface, an output interface, and an information database with each of said multiple tunneling protocols, associating a mapping interface and a mapping information base with each of said multiple tunneling protocols, and uniformly implementing a tunneling protocol by selecting an input interface, an output interface, and an information database associated with the tunneling protocol to be implemented.

As described in detail above, neither Shrader nor Hauck teach or suggest a method for implementing multiple tunneling protocols. It is believed that the Examiner is improperly equating the phrase “multiple tunnels” with the phrase “multiple tunneling protocols”.

In order to expedite the processing of this application, the Applicant has focused on the independent claims, namely, claims 1, 9, 15, 22, and 31. It is believed that the rejections of these claims have been overcome by amendment and/or argument. It should be understood, however, that it is not the Applicant's position that the dependent claims stand or fall with the claim from which they depend.

In light of all of the above, it is submitted that the claims are in order for allowance, and prompt allowance is earnestly requested. Should any issues remain outstanding, the Examiner is invited to call the undersigned attorney of record so that the case may proceed expeditiously to allowance.

Respectfully submitted,

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